## REMARKS

Claims 1-3, 7, 13, and 14 are pending in this application.

By this Amendment, claim 7 has been canceled without prejudice or disclaimer. Claim 1 has been amended to more particularly point out and distinctly claim Applicants' invention. Support for the amendment can be found at page 4, lines 25-26. No new matter has been added as a result of this Amendment.

### *Claim Rejections*

*Rejections Under 35 U.S.C. § 102/103*

A. Response to rejection of claims 1-3, 7, 13, and 14 under 35 U.S.C. 103(a) as being unpatentable over Bohnen et al.

In response to the rejection of claims 1-3, 7, 13 and 14 under 35 U.S.C. 103(a) as being unpatentable over WO 99/43717, equivalent U.S. 6,391,989 relied upon for translation of Bohnen et al. ("Bohnen"), Applicants submit that with respect to claims 1-3, 13 and 14, a *prima facie* case of obviousness has not been made by the Examiner, and traverse the rejection; and that with respect to claim 7, this claim has been canceled, thereby rendering this rejection moot.

With respect to a rejection under §103, in order to establish a *prima facie* case of obviousness, the Examiner must establish all three of the following essential criteria: (1) the cited reference must teach or suggest each of the claimed elements (MPEP §2143.03); (2) there must be a motivation in the cited prior art to modify the reference as suggested by the Examiner (MPEP §2143.01); and (3) the cited reference must provide a basis for a reasonable expectation for success (MPEP 2143.02). The motivation to modify and the reasonable expectation for success must come from the cited prior art and not the Applicants' specification. Further, it is not enough that a reference can be modified absent a suggestion in the cited prior art to undertake such modification (MPEP §2143.01).

The current claims are directed to a process for producing a polymer of ethylene containing from 0.1 to 99 % by mol of derived units of at least one alpha-olefin of formula $CH_2$=CHA, wherein A is a $C_2$-$C_{20}$ alkyl radical and optionally up to 5% by mol polyene, comprising contacting, under polymerization conditions, ethylene, at least one alpha-olefin and optionally said polyene, in the presence of a catalyst system obtained by contacting a metallocene

compound of formula (I) with an alumoxane. As acknowledged by the Examiner, Bohnen does not show working examples of the polymerization process described in the current claims. Indeed, the only examples shown in the reference are the homopolymerization of propylene. However, in addition, the catalyst system disclosed by Bohnen does not contain an alumoxane, so the reference clearly does not teach all the elements of the claims. Moreover, Bohnen teaches away from modifying the current claims so as to arrive at the current claims since it describes the economic disadvantages of using methyaluminoxane:

> To obtain an active catalyst system, the metallocene complex is treated with a large excess of methylaluminoxane (MAO) (H. Sinn, W. Kaminsky, Adv. Organomet. Chem., 1980, 18, 99). Apart from the high cocatalyst costs, this has the disadvantage of a high aluminum content in the resulting polymer. (col. 1, lines 15-20)

Therefore, a *prima facie* case of obviousness has not been made out. Reconsideration and withdrawal of the rejection respectfully is requested.

B. Response to rejection of claims 1-3, 7, 13, and 14 under 35 U.S.C. 103(a) as being unpatentable over Kratzer et al.

In response to the rejection of claims 1-3, 7, 13 and 14 under 35 U.S.C. 103(a) as being unpatentable over WO 01/47635, equivalent U.S. Patent No. 6,953,829 of Kratzer et al. ("Kratzer"), Applicants submit that with respect to claims 1-3, 13 and 14, a *prima facie* case of obviousness has not been made by the Examiner, and traverse the rejection; and that with respect to claim 7, this claim has been canceled, thereby rendering this rejection moot.

The requirements to prove a case under §103 have been summarized in paragraph A above, and are incorporated by reference into this paragraph.

The current claims are directed to a process for producing a polymer of ethylene containing from 0.1 to 99 % by mol of derived units of at least one alpha-olefin of formula $CH_2$=CHA, wherein A is a $C_2$-$C_{20}$ alkyl radical and optionally up to 5% by mol polyene, comprising contacting, under polymerization conditions, ethylene, at least one alpha-olefin and optionally said polyene, in the presence of a catalyst system obtained by contacting a metallocene compound of formula (I) with an alumoxane. As acknowledged by the Examiner, Kratzer does

not show working examples of the polymerization process described in the current claims. Indeed, the only examples shown in the reference are the homopolymerization of propylene. However, in addition , the catalyst system disclosed by Kratzer does not contain an alumoxane, so that the reference clearly does not teach all the elements of the claims. Moreover, Kratzer teaches away from modifying the current claims so as to arrive at the current claims since it describes the desirability of avoiding the use of aluminoxanes:

> The catalyst system can advantageously be used for the polymerization of olefins and displays a high catalyst activity and gives a good polymer morphology without it being necessary to use aluminoxanes such as methylaluminoxane (MAO), which usually has to be used in high excess, as cocatalyst. (col. 1, lines 8-13)

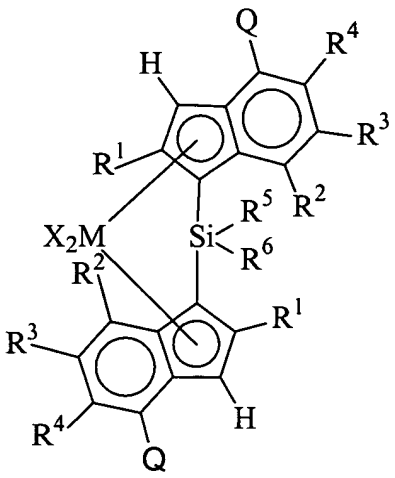
Therefore, a *prima facie* case of obviousness has not been made out. Reconsideration and withdrawal of the rejection respectfully is requested.

C. Response to rejection of claims 1-3, 7, 13, and 14 under 35 U.S.C. 103(a) as being unpatentable over Kawasaki et al.

In response to the rejection of claims 1-3, 7, 13 and 14 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,723,794 of Kawasaki et al. ("Kawasaki"), Applicants submit that with respect to claims 1-3, and 13 and 14, a *prima facie* case of obviousness has not been made by the Examiner, and traverse the rejection; and that with respect to claim 7, the claim has been canceled, thereby rendering this rejection moot.

The requirements to prove a case under §103 have been summarized in paragraph A above, and are incorporated into this paragraph by reference.

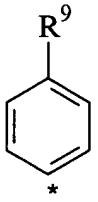
The Examiner has pointed to the metallocene of formula II of claim 5, and further singled out two metallocene compounds of the 127 metallocene compounds listed in columns 45 to 49: rac-Dimethylsilylene-bis(2-methyl-4-(p-tolyl)-1-indenyl)zirconium dichloride (col. 46, lines 16-17), and rac-Dimethylsilylene-bis(2-methyl-4-(p-biphenyl)-1-indenyl)zirconium dichloride (col. 46, lines 32-33) as evidence of what the reference teaches with regard to compounds meeting the structure of formula II. However, neither of these compounds are a metallocene compound as in the current claims:



(I)

wherein

Q is a radical of formula (IIa) which is bonded to the indenyl at the position marked by the symbol *;



(IIa)

wherein

$R^9$ is a group of formula $C(R^{12})_3$ wherein $R^{12}$, same or different, is a linear or branched, saturated or unsaturated $C_1$-$C_6$-alkyl radical.

Nor does the specification otherwise teach such a metallocene compound of formula II, where $R^3$ is described as including "aryls groups, such as the above-exemplified aryl groups, tolyl, dimethylphenyl, trimethylphenyl, ethylphenyl, propylphenyl, methylnaphthyl and benzylphenyl." (col. 44, lines 49-51) Furthermore, as acknowledged by the Examiner, Kawasaki does not show working examples of a process described in the current claims. Finally, there is

no teaching in the reference to modify Kawasaki so as to arrive at the present claims. Therefore, a *prima facie* case of obviousness has not been made out. However, even if a *prima facie* case of obviousness had been made out, the specification includes comparative test data that overcomes such a case. As noted by the Examiner in the Office Action dated March 30, 2006, the reference includes $Me_2Si(2\text{-}Me\text{-}4\text{-}Ph\text{-}indenyl)_2ZrCl_2$ in the list of metallocene compounds of columns 45-49. However, this is exactly the compound shown in the comparative examples of the specification as compound C1. Table 1 demonstrates unexpected positive results with respect to comonomer incorporation ability using the recited metallocene compounds in the process of the current claims relative to the C1 compound.

Reconsideration and withdrawal of the rejection respectfully is requested.

Applicants respectfully request that a timely Notice of Allowance be issued in this case. Should the Examiner have questions or comments regarding this application or this Amendment, Applicant's attorney would welcome the opportunity to discuss the case with the Examiner.

The Commissioner is hereby authorized to charge U.S. PTO Deposit Account 08-2336 in the amount of any fee required for consideration of this Amendment.

This is intended to be a complete response to the Office Action mailed September 22, 2006.

Respectfully submitted,

William R. Reid
Registration No. 47,894
Attorney for Applicant

I hereby certify that this correspondence is being deposited with sufficient postage thereon with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on March 12, 2007.

March 12 2007
Date of Signature

Basell USA Inc.
912 Appleton Road
Elkton, MD 21921
Attorney's Telephone No.: 410-996-1783
Attorney's Fax No.: 410-996-1560